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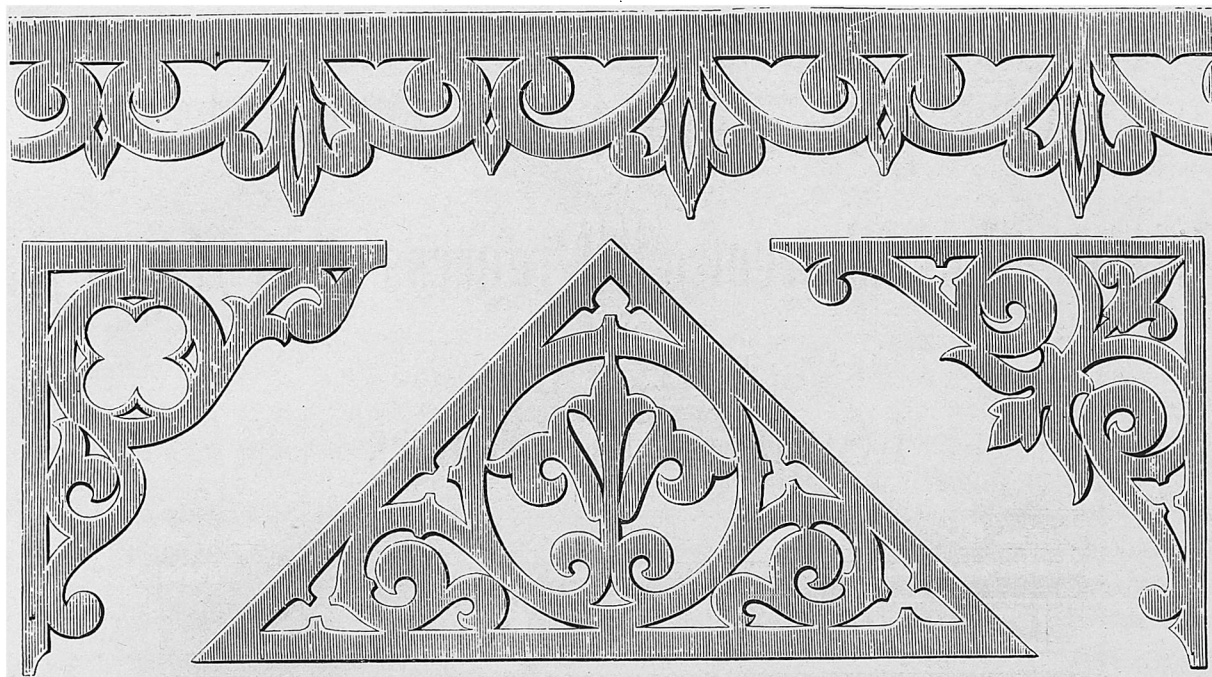
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Nos. 37—40. Designs for Perforated Ornamental Work in Wood by Mr. P. Petsch, Saarbrücken.

VARIOUS.

Electrotypes of Gelatin Pictures.

To prepare gelatin relief pictures for the galvanoplastic deposition of copper, the film is glued to a glass plate by copal varnish, and immersed for an hour in a concentrated solution of tannic acid, in order to render it less sensitive to the action of water. It is then suspended in a silver bath, until the whole surface is moistened. The picture is then laid down horizontally in the sunlight, and a copper wire moved over its surface. The silver separates as brilliant metal on the wire and on the parts of the picture touched by it. It then becomes a conductor, and a weak current to deposit copper upon its surface. In this way a gelatin picture can be easily converted into an electrotypes.

The Age of Bronze.

Two years ago the International Congress for Anthropology and Pre-Historical Archaeology met for the fourth time at Copenhagen, when one of the chief questions raised was that of the origin of what is called the age of Bronze, because that alloy seems to have preceded iron in the manufacture of weapons. The matter was adjourned to the following year, when the Congress was to have met at Bologna, had not the war frustrated the plan. The fifth session, therefore, only took place this year on the 1st of October, and we find an ample account of its labours in the *Revue Scientifique*. It appears from the debates that during the previous session the venerable patriarch of Northern archaeology, Professor Nilsson, had maintained his opinion that the Phœnicians were the true importers of bronze into the north of Europe, and that, under their influence, Scandinavian artisans had learnt to make those well-executed weapons which are still admired in the museums of Northern antiquities. M. Worsace was of a different opinion, and placed the cradle of the age of bronze in Asia, whence the art was imported into Europe. Nor did he concur in the view of those who supposed the existence of certain manufacturing centres, whether in Etruria, Greece, Rome, or Phœnicia, whence bronze weapons might have been exported to all the nations of the universe then known. M. Desor adduced further reasons

against M. Nilsson's views, remarking that since the discovery of lacustral dwellings in Switzerland, where common household utensils were found which had been cast on the spot, besides other articles of greater finish, and ornamented in a peculiar style, it would be hard to admit that Scandinavia should have provided Switzerland, nay, even Austria and Gaul, with bronze; it would be worse still to suppose that the same designs of ornaments had sprung up in several places at the same time. Hence there must have existed some place where alone bronze was manufactured for the rest of the world. For the present the question rests at this point.

Material for Paper.

The British Consul General at Havannah, Mr. Graham Dunlop, in his report for the year 1870—1871, observes that it is thought that the papermakers of England should give some attention to the enormous quantities of fibrous tropical plants and trees which abound in Cuba. Successful experiments have been made by local papermakers on the fibre of the bamboo cane, and on some of the creeping parasite plants indigenous to Cuba. The Consul hears that attention is being given in Jamaica to the preparation of the fibre of the bamboo for the papermakers in America. This beautiful plant or rather tree grows abundantly in Cuba, and could be purchased and crushed at very cheap rates. It is said to excel, for paper, all the fibrous grasses of late used by our papermakers, and to mix easily with the linen rag pulp and other more ordinary materials.

Portland Cement and Iron Filings.

Abbé Moignon, in his valuable scientific journal *Les Mondes*, relates his personal experience with a concrete formed of fine wrought and cast iron filings and Portland cement. The abbé states that a cement made thus is hard enough to resist any attempts to fracture it. As he states that the iron filings are to replace the sand usually put into the mixture, we presume that the relative quantities are to be similar.